

Journal of Molecular Spectroscopy

VOLUME 131, 1988

Editor

K. Narahari Rao

Editorial Committee

Frank C. De Lucia

Jon T. Hougen

James K. G. Watson



ACADEMIC PRESS, INC.

Harcourt Brace Jovanovich, Publishers

San Diego New York Boston

London Sydney Tokyo Toronto

Copyright © 1988 by Academic Press, Inc.

ALL RIGHTS RESERVED

No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy, recording, or any information storage and retrieval system, without permission in writing from the copyright owner.

The appearance of the code at the bottom of the first page of an article in this journal indicates the copyright owner's consent that copies of the article may be made for personal or internal use, or for the personal or internal use of specific clients. This consent is given on the condition, however, that the copier pay the stated per copy fee through the Copyright Clearance Center, Inc. (27 Congress Street, Salem, Massachusetts 01970), for copying beyond that permitted by Sections 107 or 108 of the U. S. Copyright Law. This consent does not extend to other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works, or for resale. Copy fees for pre-1988 articles are as shown on the article title pages; if no fee code appears, the copy fee is the same as for current articles.

0022-2852/88 \$3.00

MADE IN THE UNITED STATES OF AMERICA

CONTENTS OF VOLUME 131

NUMBER 1, SEPTEMBER 1988

PASHAEV MAMED ALIRZA OGLY, BASKAKOV OLEG IGOREVITCH, POLEVOY BORIS IVANOVITCH, AND DYUBKO STANISLAV FILIPPOVITCH. Centrifugal Distortion in the Submillimeter Rotational Spectrum of Fluoroform	1
JUAN C. LÓPEZ, JOSÉ L. ALONSO, AND FRANCISCO J. PELÁEZ. The Microwave Spectrum of α -Methyl- γ -butyrolactone	9
M. MARGOTTIN-MACLOU, P. DAHOO, A. HENRY, A. VALENTIN, AND L. HENRY. Self-, N_2 -, and O_2 -Broadening Parameters in the ν_3 and $\nu_1 + \nu_3$ Bands of $^{12}C^{16}O_2$	21
YOSHIAKI HAMADA, NAOKI TANAKA, AND MASAMICHI TSUBOI. Far-Infrared Spectrum of $^{15}N^{16}O_2$	36
NAOKI TANAKA, YOSHIAKI HAMADA, CHIKASHI YAMADA, AND EIZI HIROTA. Molecular Parameters of the ν_2 Band of $^{15}N^{16}O_2$	44
M. VERVLOET, H. BREDOHL, I. DUBOIS, AND F. MELEN. The $D''(3d\sigma)^2\Sigma^+ - C'(4p\pi)^2\Pi$ and $C'(4p\pi)^2\Pi - B(4s\sigma)^2\Sigma^+$ Rydberg-Rydberg Transitions of SiF	53
KENTAROU KAWAGUCHI, TAKAYOSHI AMANO, AND EIZI HIROTA. Infrared Diode Laser Spectroscopy of the $\nu_2 + \nu_3$ Band of CCH	58
M. SERGENT-ROZEY, NGUYEN-VAN-THANH, I. ROSSI, N. LACOME, AND A. LEVY. Collisional Broadening and Line Intensities in the Pure Rotational Spectrum of PH_3	66
JOHN H. CARPENTER, ADAM WALTERS, MICHAEL D. RABBETT, AND JOHN G. BAKER. The Orientation of the Electric Field Gradient Tensor in Gaseous PCl_3 by Millimeter-Wave and Supersonic-Jet Fourier Transform Microwave Spectroscopy	77
HIROYUKI KANATA, SATOSHI YAMAMOTO, AND SHUJI SAITO. The Dipole Moment of the PO Radical Determined by Microwave Spectroscopy	89
A. S.-C. CHEUNG, K. YOSHINO, D. E. FREEMAN, AND W. H. PARKINSON. Wavelength Measurement and Analysis of the Schumann-Runge Absorption Bands of $^{18}O_2$ in the Region 175-205 nm	96
G. CHEVAL, J.-L. FEMENIAS, A. J. MERER, AND U. SASSENBERG. Rotational and Hyperfine Analysis of the $C^4\Sigma^- - X^4\Sigma^-$ (Blue) System of Niobium Oxide, NbO	113
E. H. FINK, K. D. SETZER, U. KOTTSEPER, D. A. RAMSAY, AND M. VERVLOET. The $a^1\Delta(a_2) - X^3\Sigma^-(X_21)$ Electronic Band System of Selenium Monoxide	127
Š. URBAN. Effective Rotational Hamiltonians of Pyramidal XY_3 Molecules with the Inversion Splittings of Energy Levels	133
W. CAMINATI, A. C. FANTONI, B. LUNELLI, AND F. SCAPPINI. Radiofrequency-Microwave Double Resonance with a Dipole Moment Component Induced by Asymmetric Isotopic Substitution: Microwave Spectrum of $C_4O_2Cl_2$	154
JOHN M. BROWN AND KENNETH M. EVENSON. The Far-Infrared Laser Magnetic Resonance Spectrum of Vibrationally Excited C_2H^1	161
W. CAMINATI, B. VOGELSANGER, R. MEYER, G. GRASSI, AND A. BAUDER. Rotational Spectrum, Dipole Moment, and Ring-Puckering Potential of Cyclobutane-1,1- d_2	172

S. GIORGIANNI, A. BALDACCI, A. GAMBI, R. VISINONI, AND S. GHERSETTI. High-Resolution Infrared Study of the $2\nu_5^0$ Band of CF_3Cl	185
AARON GOLDMAN, JAMES B. BURKHOLDER, CARLETON J. HOWARD, RAFAEL ESCRIBANO, AND ARTHUR G. MAKI. Spectroscopic Constants for the ν_9 Infrared Band of HNO_3	195

LETTER TO THE EDITOR

G. MAGERL, W. SCHUPITA, L. JÖRISSEN, AND W. A. KREINER. Resolution of the Linear Stark Effect in the ν_4 Fundamental of $^{13}\text{CD}_4$	201
---	-----

NUMBER 2, OCTOBER 1988

ZYGMUNT JAKUBEK. Deperturbation and Rotational Analysis of the Bands of the $B^2\Sigma^+-A^2\Pi_i$ System of the $^{13}\text{C}^{16}\text{O}^+$ Molecule	207
YUKIHISA OHSUGI AND NOBUKIMI OHASHI. 0.85- μm Diode Laser Spectroscopy of $^{12}\text{C}_2\text{H}_2$. Rotational Analysis and Intensity Measurements	215
G. GUSTAFSSON, T. GUSTAVSSON, AND H. MARTIN. Fourier Transform Spec- troscopy of the Near-Infrared $A^2\Pi-X^2\Sigma^+$ Transition of BaCl . A Study of the Interaction between the $A^2\Pi$ and $B^2\Sigma^+$ States	223
KUNIAKI NAKAGAWA, KOUJI HORII, TOICHI KONNO, AND HIROMICHI UEHARA. Infrared Diode Laser Spectroscopy of BrF and BrCl	233
C. PURSELL, W. C. HO, F. SCAPPINI, AND T. OKA. Infrared-Radiofrequency Double Resonance Spectroscopy of CH_3F Using a Color Center Laser ..	241
M. DOUAY, R. NIETMANN, AND P. F. BERNATH. New Observations of the $A^1\Pi_u-X^1\Sigma_g^+$ Transition (Phillips System) of C_2	250
M. DOUAY, R. NIETMANN, AND P. F. BERNATH. The Discovery of Two New Infrared Electronic Transitions of C_2 : $B^1\Delta_g-A^1\Pi_u$ and $B'^1\Sigma_g^+-A^1\Pi_u$	261
KEIICHI TANAKA, KINYA KATO, AND TAKEHIKO TANAKA. Microwave Spec- trum of Diacetylene- d in the Ground and Excited Vibrational States	272
KEIJI MATSUMURA, HIDETO KANAMORI, KENTAROU KAWAGUCHI, EIZI HIR- OTA, AND TAKEHIKO TANAKA. Infrared Diode Laser Spectroscopy of Tri- acetylene by the Source and the Stark Modulation Techniques	278
J. A. COXON, P. G. HAJIGEORGIOU, AND K. P. HUBER. Rotational Analysis of the $B^1\Sigma^+ \rightarrow X^1\Sigma^+$ Emission Bands of D^{35}Cl	288
P. CARETTE AND A. HOCQUET. Ligand Field Calculation of the Lower Electronic Energy Levels of the Lanthanide Monoxides	301
OVE GUSTAFSSON AND MAGNUS RITTBY. A Study of the Predissociation in the $A^1\Pi$ State of BH	325
J. F. OGILVIE. Radial Functions from the Hyperfine Spectrum of NaBr	340
MARTIN GRUEBELE, ERIC KEIM, ALAN STEIN, AND RICHARD J. SAYKALLY. Experimental Potential Functions for Open and Closed Shell Molecular Ions: Adiabatic and Nonadiabatic Corrections in $X^3\Sigma^- \text{OH}^+$ and $X^1\Sigma^+ \text{ArH}^+$	343
C. LINTON AND Y. C. LIU. Analysis of Rotational and Hyperfine Structure in Holmium Monoxide	367
M. CHEVALIER, A. DE MARTINO, AND F. MICHELOT. Vibration-Rotation In- teractions and Local Modes in Tetrahedral Molecules	382

NOTES

G. GUELACHVILI, O. V. NAUMENKO, AND O. N. ULENIKOV. On the Analysis of Some Hyperweak Absorption Bands of SO ₂ in the Regions 1055–2000 and 2200–2550 cm ⁻¹	400
E. W. KAISER. Non-Born–Oppenheimer Effects on the Chlorine Quadrupole Coupling Constants of H ³⁵ Cl and D ³⁵ Cl	403
KENJI NAKANO, AYUMI SAITO, AND NOBUKIMI OHASHI. 0.82-μm Diode Laser Linestrength Measurements of the 2ν ₁ + ν ₂ + ν ₃ Band of H ₂ O	405
AUTHOR INDEX FOR VOLUME 131	407
SUBJECT INDEX FOR VOLUME 131	409

